

**WHAT IS CLAIMED IS:**

1. A coloring composition for a keratin material, comprising:
  - (i) at least one coloring agent component comprising, in a physiologically acceptable medium,
    - at least one dye precursor chosen from compounds comprising at least one aromatic ring comprising at least two hydroxyl groups borne by two successive carbon atoms of the at least one aromatic ring, and
    - at least one catalytic system comprising at least one first catalyst (1) chosen from Mn(II) and Zn(II) salts and oxides and at least one second catalyst (2) chosen from alkali metal hydrogen carbonates and alkaline-earth metal hydrogen carbonates;wherein the catalysts (1) and (2) are present with the at least one dye precursor in a single composition (A) or separated into two components (A<sub>1</sub>) and (A<sub>2</sub>) wherein the at least one dye precursor is present in at least one of the components (A<sub>1</sub>) and (A<sub>2</sub>);and at least one component chosen from:
  - (ii) a component (B) comprising at least one acidic composition, and
  - (iii) a component (C) comprising at least one alkaline composition.
2. The coloring composition according to Claim 1, wherein the at least one coloring agent component comprises two separate components (A<sub>1</sub>) and (A<sub>2</sub>), wherein:  
(A<sub>1</sub>) comprises, in a physiologically acceptable medium, the at least one dye precursor and one of the at least one catalyst (1) and the at least one catalyst (2) and  
(A<sub>2</sub>) comprises, in a physiologically acceptable medium, the other of the at least one catalyst (1) and the at least one catalyst (2) not present in the component (A<sub>1</sub>).
3. The coloring composition according to Claim 1, wherein, in the at least one

coloring agent component, the proportions of the at least one first catalyst (1) to the at least one second catalyst (2) are chosen such that:

$$\frac{[Mn(II)]}{[HCO_3]} \leq 1 \text{ with } [Mn(II)] \neq 0$$

$$\frac{[Zn(II)]}{[HCO_3]} \leq 1 \text{ with } [Zn(II)] \neq 0$$

$$\frac{[Mn(II) + Zn(II)]}{[HCO_3]} \leq 1 \text{ with } [Mn(II)] \text{ and } [Zn(II)] \neq 0$$

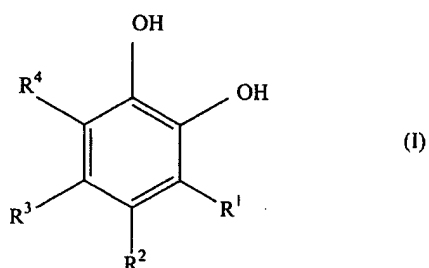
wherein  $[Mn(II)]$ ,  $[Zn(II)]$  and  $[HCO_3]$  represent, respectively, the molar concentrations of Mn(II), Zn(II) and  $HCO_3$  in the composition.

4. The coloring composition according to Claim 3, wherein the ratio  $\frac{[Mn(II)]}{[HCO_3]}$  ranges from  $10^{-5}$  to  $10^{-1}$ .
5. The coloring composition according to Claim 4, wherein the ratio  $\frac{[Mn(II)]}{[HCO_3]}$  ranges from  $10^{-3}$  to  $10^{-2}$ .
6. The coloring composition according to Claim 5, wherein the ratio  $\frac{[Mn(II)]}{[HCO_3]}$  is about  $5 \times 10^{-3}$ .
7. The coloring composition according to Claim 3, wherein the ratio  $\frac{[Zn(II)]}{[HCO_3]}$  ranges from  $10^{-4}$  to  $< 1$ .

8. The coloring composition according to Claim 7, wherein the ratio  $\frac{[Zn(II)]}{[HCO_3]}$  ranges from  $10^{-3}$  to  $< 1$ .
9. The coloring composition according to Claim 8, wherein the ratio  $\frac{[Zn(II)]}{[HCO_3]}$  is about  $5 \times 10^{-1}$ .
10. The coloring composition according to Claim 3, wherein the ratio  $\frac{[Mn(II) + Zn(II)]}{[HCO_3]}$  ranges from  $10^{-5}$  to  $10^{-1}$ .
11. The coloring composition according to Claim 10, wherein the ratio  $\frac{[Mn(II) + Zn(II)]}{[HCO_3]}$  ranges from  $10^{-3}$  to  $10^{-2}$ .
12. The coloring composition according to Claim 1, wherein, in the at least one coloring agent component, the Mn(II) and Zn(II) salts are chosen from at least one of chloride, fluoride, iodide, sulphate, phosphate, nitrate and perchlorate, carboxylic acid salts.
13. The coloring composition according to Claim 12, wherein the Mn(II) and/or Zn(II) salts are chloride salts.
14. The coloring composition according to Claim 12, wherein the carboxylic acid salts are chosen from hydroxylated carboxylic acid salts.
15. The coloring composition according to Claim 14, wherein the hydroxylated carboxylic acid salts are gluconate salts.
16. The coloring composition according to Claim 1, wherein, in the at least one coloring agent component, the hydrogen carbonates are chosen from at least one of sodium hydrogen carbonate, potassium hydrogen carbonate, magnesium hydrogen carbonate and calcium hydrogen carbonate.

17. The coloring composition according to Claim 1, wherein, in the at least one coloring agent component, the at least one aromatic ring of the at least one dye precursor is chosen from a benzene ring and fused aromatic rings.

18. The coloring composition according to Claim 17, wherein the at least one dye precursor is chosen from compounds of the following formula:



wherein:

-  $R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$ , which may be identical or different, are each chosen from a hydrogen atom, halogen atoms, hydroxyl groups, carboxyl groups, alkylcarboxylate groups, optionally substituted amino groups, optionally substituted linear or branched alkyl groups, optionally substituted linear or branched alkenyl groups, optionally substituted cycloalkyl, alkoxy, alkoxyalkyl and alkoxyaryl radicals, the aryl group being optionally substituted, aryl and substituted aryl radicals, optionally substituted heterocyclic radicals, and radicals optionally comprising at least one silicon atom, wherein two of the substituents chosen from  $R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  together form at least one ring chosen from saturated and unsaturated rings optionally comprising at least one hetero atom and optionally fused with at least one ring chosen from saturated and unsaturated rings optionally comprising at least one hetero atom.

19. The coloring composition according to Claim 1, wherein the at least one dye precursor is chosen from flavanols, flavonols, anthocyanidins, anthocyanins,

hydroxybenzoates, flavones and iridoids, these compounds optionally being osylated and/or in the form of oligomers, hydroxystilbenes which are optionally osylated, 3,4-dihydroxyphenylalanine and derivatives thereof, 2,3-dihydroxyphenylalanine and derivatives thereof, 4,5-dihydroxyphenylalanine and derivatives thereof, 4,5-dihydroxyindole and derivatives thereof, 5,6-dihydroxyindole and derivatives thereof, 6,7-dihydroxyindole and derivatives thereof, 2,3-dihydroxyindole and derivatives thereof, dihydroxycinnamates, hydroxycoumarins, hydroxyisocoumarins, hydroxycoumarones, hydroxyisocoumarones, hydroxychalcones, hydroxychromones, anthocyanins, quinones and hydroxyxanthones.

20. The coloring composition according to Claim 1, wherein, in the at least one coloring agent component, the at least one dye precursor is chosen from extracts of plants, of fruits, of citrus plants and of vegetables.

21. The coloring composition according to Claim 20, wherein the at least one dye precursor is chosen from extracts of tea, of grape, of apple, of cocoa, of sorghum, of banana, and of potato.

22. The coloring composition according to Claim 1, wherein, in the at least one coloring agent component, the at least one dye precursor is present in an amount of at least 10 micromol per millilitre of the coloring agent component.

23. The coloring composition according to Claim 1, wherein the physiologically acceptable medium for the at least one coloring agent component is a solubilizing medium for the at least one dye precursor.

24. The coloring composition according to Claim 23, wherein the physiologically acceptable medium is a solubilizing medium with bacteriostatic properties.

25. The coloring composition according to Claim 1, wherein the physiologically

acceptable medium for the at least one coloring agent component comprises at least one solvent for the at least one dye precursor.

26. The coloring composition according to Claim 25, wherein the at least one solvent is chosen from water, alcohols, ethers, dimethyl sulphoxide, N-methylpyrrolidone and acetones.

27. The coloring composition according to Claim 26, wherein the alcohols are chosen from alkanols and alkanediols.

28. The coloring composition according to Claim 26, wherein the at least one solvent is a water/alcohol mixture.

29. The coloring composition according to Claim 28, wherein the alcohol is present in an amount up to 80% by weight, relative to the total weight of the water/alcohol mixture.

30. The coloring composition according to Claim 29, wherein the alcohol is present in an amount ranging from 1% to 50% by weight, relative to the total weight of the water/alcohol mixture.

31. The coloring composition according to Claim 30, wherein the alcohol is present in an amount ranging from 5% to 20% by weight, relative to the total weight of the water/alcohol mixture.

32. The coloring composition according to Claim 1, wherein the at least one coloring agent component is free of any agent for chelating the Mn(II) and/or Zn(II) salts.

33. The coloring composition according to Claim 1, wherein the at least one coloring agent component comprises no propigmenting enzymes.

34. The coloring composition according to Claim 1, wherein the at least one coloring agent component is in a form chosen from creams, milks, gels, cream-gels, lotions,

powders and solid blocks.

35. The coloring composition according to Claim 1, wherein the at least one coloring agent component is packaged in a one-compartment device comprising the at least one dye precursor and the at least one catalytic system.

36. The coloring composition according to Claim 35, wherein the one-compartment device is in a form chosen from an airtight metal tube, an ampule, a sachet, a sealed wipe, an aerosol comprising at least one standard inert propellant gas, a pump device without air intake, and a solid block.

37. The coloring composition according to Claim 1, wherein the at least one coloring agent component, comprising the two components ( $A_1$ ) and ( $A_2$ ), is packaged in the form of a kit comprising two separate containers; the first container comprising the component ( $A_1$ ) comprising the at least one dye precursor and one of the at least one catalyst (1) and the at least one catalyst (2), the other container comprising the component ( $A_2$ ) comprising the other of the at least one catalyst (1) and the at least one catalyst (2) not present in the component ( $A_1$ ), wherein the components ( $A_1$ ) and ( $A_2$ ) are mixed together or applied successively at the time of use.

38. The coloring composition according to Claim 37, wherein each container, which may be identical or different, is packaged in a device chosen from an airtight metal tube, an ampule, a sachet, a sealed wipe, an aerosol comprising at least one standard inert propellant gas, a pump device without air intake, and a solid block.

39. The coloring composition according to Claim 37, wherein the device is a two-compartment aerosol comprising, respectively, the components ( $A_1$ ) and ( $A_2$ ) and with which at least one distribution orifice may be selectively placed in communication; depending on the configuration of the device, the components ( $A_1$ ) and ( $A_2$ ) may be

distributed simultaneously or successively at the time of use.

40. The coloring composition according to Claim 37, wherein the device is a system comprising two compartments each equipped with a pump without air intake, the first compartment comprising the component ( $A_1$ ), and the other compartment comprising the component ( $A_2$ ); depending on the configuration of the device, the components ( $A_1$ ) and ( $A_2$ ) may be distributed simultaneously or successively at the time of use.

41. The coloring composition according to Claim 1, wherein the at least one coloring agent component is in the form of one or two solid blocks that may be disintegrated in water.

42. The coloring composition according to Claim 1, wherein the component (B) comprises an aqueous composition comprising at least one acid chosen from mineral and organic acids.

43. The coloring composition according to Claim 42, wherein the pH of the component (B) ranges from 1 to 6.

44. The coloring composition according to Claim 42, wherein the pH of the component (B) ranges from 2 to 5.

45. The coloring composition according to Claim 42, wherein the mineral acids are chosen from at least one of hydrochloric acid (HCl) and phosphoric acid ( $H_3PO_4$ ).

46. The coloring composition according to Claim 42, wherein the component (B) comprises naturally acidic water.

47. The coloring composition according to Claim 42, wherein the organic acids are chosen from at least one of acetic acid,  $\alpha$ -hydroxy acids,  $\beta$ -hydroxy acids and  $\alpha$ - and  $\beta$ -keto acids.

48. The coloring composition according to Claim 42, wherein the organic acids



are chosen from at least one of glycolic acid, lactic acid, malic acid, tartaric acid, citric acid, mandelic acid and salicylic acid, and alkyl and alkoxy derivatives thereof.

49. The coloring composition according to Claim 48, wherein the organic acids are chosen from at least one of lactic acid, glycolic acid and citric acid.

50. The coloring composition according to Claim 1, wherein the component (B) is packaged in a form chosen from a bottle, a jar, a tube, a sachet, a wipe, an aerosol, a spray and a solid stick.

51. The coloring composition according to Claim 1, wherein the component (C) comprises an aqueous composition comprising at least one base chosen from mineral bases and organic bases.

52. The coloring composition according to Claim 51, wherein the pH of the component (C) ranges from 7 to 12.

53. The coloring composition according to Claim 52, wherein the pH of the component C ranges from 8 to 10.

54. The coloring composition according to Claim 51, wherein the mineral bases are chosen from at least one of alkali metal and alkaline-earth metal salts and alkali metal and alkaline-earth metal hydrogen carbonates.

55. The coloring composition according to Claim 51, wherein the component (C) is natural alkaline mineral water.

56. The coloring composition according to Claim 51, wherein the organic bases are chosen from alkanolamines.

57. The coloring composition according to Claim 1, wherein the component (C) is packaged in a form chosen from a bottle, a jar, a tube, a sachet, a wipe, an aerosol, a spray and a solid stick.

58. A process for coloring a keratin material, comprising
- applying to the keratin material, in the presence of oxygen,  
at least one coloring agent component comprising, in a physiologically acceptable medium,
    - at least one dye precursor chosen from compounds comprising at least one aromatic ring comprising at least two hydroxyl groups borne by two successive carbon atoms of the at least one aromatic ring, and
    - at least one catalytic system comprising at least one first catalyst (1) chosen from Mn(II) and Zn(II) salts and oxides and at least one second catalyst (2) chosen from alkali metal hydrogen carbonates and alkaline-earth metal hydrogen carbonates;  
wherein the catalysts (1) and (2) are present with the at least one dye precursor in a single composition (A),
  - developing the color to obtain a desired shade,
  - applying at least one component (B) comprising at least one acidic composition to the keratin material to fix the shade;
  - optionally applying at least one component (C) comprising at least one alkaline composition to the keratin material to increase the intensity of the color or to modify the shade; and
  - optionally fixing the new color or shade obtained by applying a new application of at least one component (B) comprising at least one acidic composition to the keratin material.

59. The process according to Claim 58, wherein the oxygen is atmospheric oxygen.

60. A process for coloring a keratin material, comprising:

- applying to the keratin material at least one component ( $A_1$ ) comprising, in a physiologically acceptable medium,

- at least one dye precursor chosen from compounds comprising at least one aromatic ring comprising at least two hydroxyl groups borne by two successive carbon atoms of the at least one aromatic ring and

- at least one catalyst system comprising either at least one first catalyst (1) chosen from Mn(II) and Zn(II) salts and oxides or at least one second catalyst (2) chosen from alkali metal hydrogen carbonates and alkaline-earth metal hydrogen carbonates;

- revealing the color in the presence of oxygen by applying at least one component ( $A_2$ ) comprising the other of the at least one first catalyst (1) and the at least one second catalyst (2) not present in the at least one component ( $A_1$ ),

- developing the color to obtain the desired shade,

- applying at least one component (B) comprising at least one acidic composition to the keratin material to fix the shade;

- optionally applying at least one component (C) comprising at least one alkaline composition to the keratin material to increase the intensity of the color or to modify the shade; and

- optionally fixing the new color or shade obtained by applying a new application of at least one component (B) comprising at least one acidic composition to the keratin material.

61. The process according to Claim 60, wherein the oxygen is atmospheric oxygen.

62. A process for coloring a keratin material comprising

- applying to a keratin material, in the presence of oxygen,

at least one coloring agent component comprising, in a physiologically acceptable medium,

- at least one dye precursor chosen from compounds comprising at least one aromatic ring comprising at least two hydroxyl groups borne by two successive carbon atoms of the at least one aromatic ring, and

- at least one catalytic system comprising at least one first catalyst (1) chosen from Mn(II) and Zn(II) salts and oxides and at least one second catalyst (2) chosen from alkali metal hydrogen carbonates and alkaline-earth metal hydrogen carbonates;

wherein the catalysts (1) and (2) are present with the at least one dye precursor in a single composition (A),

- optionally applying at least one component (C) comprising at least one alkaline composition to the keratin material to increase the intensity of the color or to modify the shade; and

- fixing the new color or shade obtained by applying at least one component (B) comprising at least one acidic composition to the keratin material.

63. The process according to Claim 62, wherein the oxygen is atmospheric oxygen.

64. A process for coloring a keratin material, comprising

- applying to the keratin material, at least one component (A<sub>1</sub>) comprising, in a physiologically acceptable medium,

- at least one dye precursor chosen from compounds comprising at least one aromatic ring comprising at least two hydroxyl groups borne by two successive carbon atoms of the at least one aromatic ring and

- at least one catalyst system comprising either at least one first catalyst

(1) chosen from Mn(II) and Zn(II) salts and oxides or at least one second catalyst (2) chosen from alkali metal hydrogen carbonates and alkaline-earth metal hydrogen carbonates,

- developing the color in the presence of oxygen by applying at least one component (A<sub>2</sub>) comprising the other of the at least one first catalyst (1) and the at least one second catalyst (2) not present in the at least one component (A<sub>1</sub>),

- optionally applying at least one component (C) comprising at least one alkaline composition to the keratin material to increase the intensity of the color or to modify the shade; and

- fixing the new color or shade obtained by applying at least one component (B) comprising at least one acidic composition to the keratin material.

65. The process according to Claim 64, wherein the oxygen is atmospheric oxygen.

66. A hair coloring product comprising

(i) at least one coloring agent component comprising, in a physiologically acceptable medium,

- at least one dye precursor chosen from compounds comprising at least one aromatic ring comprising at least two hydroxyl groups borne by two successive carbon atoms of the at least one aromatic ring, and

- at least one catalytic system comprising at least one first catalyst (1) chosen from Mn(II) and Zn(II) salts and oxides and at least one second catalyst (2) chosen from alkali metal hydrogen carbonates and alkaline-earth metal hydrogen carbonates;

wherein the catalysts (1) and (2) are present with the at least one dye precursor in a single composition (A) or separated into two components (A<sub>1</sub>) and (A<sub>2</sub>)

wherein the at least one dye precursor is present in at least one of the components ( $A_1$ ) and ( $A_2$ );

and at least one component chosen from:

(ii) a component (B) comprising at least one acidic composition, and

(iii) a component (C) comprising at least one alkaline composition.

67. A method for artificially tanning and/or browning the skin, and/or for giving a healthy complexion comprising

- applying to the skin at least one coloring composition comprising
- (i) at least one coloring agent component comprising, in a physiologically acceptable medium,

- at least one dye precursor chosen from compounds comprising at least one aromatic ring comprising at least two hydroxyl groups borne by two successive carbon atoms of the at least one aromatic ring, and

- at least one catalytic system comprising at least one first catalyst (1) chosen from Mn(II) and Zn(II) salts and oxides and at least one second catalyst (2) chosen from alkali metal hydrogen carbonates and alkaline-earth metal hydrogen carbonates;

wherein the catalysts (1) and (2) are present with the at least one dye precursor in a single composition (A) or separated into two components ( $A_1$ ) and ( $A_2$ ) wherein the at least one dye precursor is present in at least one of the components ( $A_1$ ) and ( $A_2$ );

and at least one component chosen from:

(ii) a component (B) comprising at least one acidic composition, and

(iii) a component (C) comprising at least one alkaline composition,

wherein at least two of the at least one coloring agent component, the component (B) and

the component (C) are present in the coloring composition in an amount effective for artificially tanning and/or browning the skin, and/or for giving a healthy complexion.

68. A cosmetic skin makeup product comprising

(i) at least one coloring agent component comprising, in a physiologically acceptable medium,

- at least one dye precursor chosen from compounds comprising at least one aromatic ring comprising at least two hydroxyl groups borne by two successive carbon atoms of the at least one aromatic ring, and

- at least one catalytic system comprising at least one first catalyst (1) chosen from Mn(II) and Zn(II) salts and oxides and at least one second catalyst (2) chosen from alkali metal hydrogen carbonates and alkaline-earth metal hydrogen carbonates;

wherein the catalysts (1) and (2) are present with the at least one dye precursor in a single composition (A) or separated into two components (A<sub>1</sub>) and (A<sub>2</sub>) wherein the at least one dye precursor is present in at least one of the components (A<sub>1</sub>) and (A<sub>2</sub>);

and at least one component chosen from:

(ii) a component (B) comprising at least one acidic composition, and

(iii) a component (C) comprising at least one alkaline composition,

wherein at least two of the at least one coloring agent component, the component (B) and the component (C) are present in the coloring composition in an amount effective for camouflaging skin imperfections.

69. A cosmetic makeup product for nails, eyelashes and/or eyebrows, comprising

(i) at least one coloring agent component comprising, in a physiologically acceptable medium,

- at least one dye precursor chosen from compounds comprising at least one aromatic ring comprising at least two hydroxyl groups borne by two successive carbon atoms of the at least one aromatic ring, and

- at least one catalytic system comprising at least one first catalyst (1) chosen from Mn(II) and Zn(II) salts and oxides and at least one second catalyst (2) chosen from alkali metal hydrogen carbonates and alkaline-earth metal hydrogen carbonates;

wherein the catalysts (1) and (2) are present with the at least one dye precursor in a single composition (A) or separated into two components (A<sub>1</sub>) and (A<sub>2</sub>) wherein the at least one dye precursor is present in at least one of the components (A<sub>1</sub>) and (A<sub>2</sub>);

and at least one component chosen from:

- (ii) a component (B) comprising at least one acidic composition, and
- (iii) a component (C) comprising at least one alkaline composition.